

Speed Control of Air Force One / Air Force Two

NO - SERVO Technology



Motor Control System

KEY POINTS

- 1. The Crystal Oscillator and the Digital Direct Synthesizer allow free of control the speed of rotations of the motor.
- 2. The 150W class power amplifiers drive the synchronous motor. Two power amplifiers are used to provide AC for the motor whose phase difference is correct.

3. Speed Control

- The Torque Switching Circuit controls the torque so that output power is increased to increase the rotation torque on boot.
- When the Contactless Sensor detects the correct rotation speed, the Torque Switching Circuit activates decreasing rotation toruque to minimum. At which point the unit will enter the Lock mode where the frequencies of the Digital Direct Synthesizer are fixed, and maintain a rated speed.
- While rotating at rated speed, rotation is provided by inertia with additional and minimal aid from the motor. Speed is only controlled by the motor speed but by no other factor during the rotation at a rated speed (No Servo).
- The Contactless Sensor, continually monitors the rotation speed. When the Sensor has sensed change in the rotational speed*, the microprocessor will send the difference between the actual speed and the target speed to the Digital Direct Synthesizer, and control the speed to be correct. During this process, "LOCK" blinks on the display. Then, once it has reached the desired number of rotation again, the system will enter the Lock mode and maintain the correct speed.

This innovative rotational speed control system allows a smooth and uniform rotation.

* please note that the constant rotational speed is maintained under normal conditions and a speed change may occur only when some sort of load is applied, such as holding the platter by hand or touching the record surface with a disk cleaner or so on.

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